

REMARKS

Claims 3-9, 11, 13-23, 26, 30-46, 49, 53-54, 56-66, 70-79, 81, and 84-101 are currently pending in this application. Claims 10, 12, 24, 47, 55, 67-69 and 82 have been previously canceled. Claims 1, 2, 25, 27-29, 48, 50-52, 80, and 83 are currently canceled. Applicant has amended claims 3, 26, 32, 36, 49, 54, 72, and 79 to address typographical and stylistic issues, and to more particularly point out and distinctly claim Applicant's invention. New claims 84-101 have been added. Support for these amendments can be found in the claims (*e.g.*, original claims 25, 30, 31, and 70) and the text (*e.g.*, Applicant's Specification, page 2, lines 21-24; page 7, lines 13-15; and page 7, line 26 – page 8, line 2.) No new matter has been introduced by way of these amendments.

Overview

The Examiner has rejected claims 1-9, 11, 13-15, 30, 32-40, 50, 52-64, 66, 71-79, 81, and 83 under 35 U.S.C § 102(b) as being anticipated by Hansen et al. ("Hansen"), U.S. Patent No. 5,832,263. The Examiner has also rejected claims 1-4, 27-29, 32, 50-52, 54, 55, 72, 79, and 83 under 35 U.S.C § 103(a) as obvious over White et al. ("White"), U.S. Patent No. 6,092,161 in view of Hansen. In addition, the Examiner has rejected claims 16-23, 25, 31, 41-46, 48-49, 65, 70, and 80 under 35 U.S.C § 103(a) as obvious over Hansen in view of Kobayashi et al. ("Kobayashi"), U.S. Patent No. 5,437,018. Furthermore, the Examiner has rejected claims 16-26, 31, 41-49, 65, 70, and 80 under 35 U.S.C § 103(a) as obvious over White, in view of Hansen, and further in view of Kobayashi et al. ("Kobayashi"), U.S. Patent No. 5,437,018.

Applicant respectfully traverses all these rejections for the reasons discussed in detail below.

Applicant notes the amendments provided are clarifying amendments and do not necessitate a new search, as these concepts from prior claims should have been searched by the Examiner already. *See e.g.*, previously presented claims 25-26, 30, 31, 48-49, 70, and 79-83. Similarly, the new claims do not necessitate a new search as they also contain concepts from prior claims that should already have been searched. *See e.g.*, previously presented claims 30, 31, 41-46, 53, 56, 63-66, 77, and 79-83.

Telephone Interview

Applicant's representative thanks the Examiner for his courtesy and attention given during the telephone interview of August 28, 2007. Applicant's representative and the Examiner discussed the pending claims in light of the cited references, as well as apparent lack of written acknowledgment of evidence submitted under 37 CFR 1.132. In view of this interview, Applicant has amended claims 3, 32, and 54 to clarify that the "intercepting from requesting code" is from "code that is external to the loaded software redirection driver," thereby rendering moot any argument that the driver itself can perform an act of intercepting from itself. Applicant has also submitted additional evidence by declaration. Applicant hopes that this clarification, in addition to other amendments and supplemental objective evidence, will bring the claims in position for allowance, as discussed further below.

Supplemental Rule 132 Declaration

Applicant is submitting herewith a Supplemental Rule 132 Declaration of Dr. Randy Keith Lomnes under 37 CFR 1.116(e) ("Supplemental Declaration"). In response to a first Rule 132 Declaration of Dr. Randy Keith Lomnes filed June 21, 2007 with Applicant's prior amendment ("Original Declaration"), the Examiner modified his rejection based upon White from a 35 U.S.C. § 102 anticipation rejection to a 35 U.S.C. § 103 obviousness rejection. The Examiner stated that this was indeed his "acknowledgment" of the original submission of evidence in the telephone interview of August 28, 2007, although the Examiner has failed to explicitly acknowledge in writing the declaration in his Office Action as required under the MPEP. As stated therein,

...All entered affidavits, declarations, and other evidence traversing rejections are acknowledged and commented upon by the examiner in the next succeeding action... Where evidence is insufficient to overcome the rejection, the examiner must specifically explain why the evidence is insufficient"

See, M.P.E.P. §716.01(B).

For these reasons it became necessary for Applicant to submit objective evidence of non-obviousness, which are included in paragraphs 4-16 of the Supplemental Declaration, to provide evidence for non-obviousness over White – a new issue brought up by the Examiner, without even explicit acknowledgement of the first declaration. As obviousness over White was

not at issue at the time of filing the Original Declaration (the Examiner introduced a new rejection, yet made his Office Action final), it was not reasonable for Applicant to have earlier submitted such evidence, as it would not have been apropos. Accordingly, Applicant is submitting this Supplemental Declaration for consideration and respectfully requests its entry and explicit acknowledgment.

Rejections of Independent Claims 3, 32, 54, and 72 Based on Hansen and/or Kobayashi

Each of independent claims 3, 32, 54, and 72, as amended, recite aspects that are nowhere taught, suggested, or motivated by Hansen or Kobayashi. In particular, each of these claims recites the behavior of Applicant's invention in response to, and after, a received shutdown request. Specifically, claim 3 recites,

in response to a received request to shutdown the computer system, disregarding the data in the redirected space;
after the disregarding of the data in the redirected space, intercepting from requesting code a request to read the location in the protected space; and
in response to the intercepting of the request to read the location in the protected space, providing data from the location in the protected space instead of providing data from the redirected space ...

Claims 32, 54, and 72 include similar language.

Hansen does not teach, suggest, or motivate disregarding redirected data in response to a received shutdown request such that subsequent requests (to previously redirected locations) provide access to the data as it existed before redirection. The Examiner does not assert, and Applicant can find no description of, the actions taken by Hansen in response to a received shutdown, such as disregarding data stored in a redirected space. Rather, if anything is deemed suggested or discussed at all, Hansen appears to teach the opposite – continuing to regard the data. Hansen appears to be keeping modifications and/or annotations to non-modifiable files on a non-volatile tracking store, and as such cannot fairly be said to suggest disregarding data in a redirected space as recited by Applicant's claims. (See *e.g.*, Hansen, 2:61-63; 3:6-8; 5:43-50; and 6:37-39.)

Nor does Kobayashi teach, suggest, or motivate disregarding redirected data in response to a received shutdown request as recited. The Examiner asserts that Kobayashi

teaches disregarding redirected data in arguing that the Kobayashi RAM data is lost upon power-down. (Office Action, p. 22-23, rejection of claims 25 and 48.) However, even if Kobayashi's RAM area 58 can be equated with Applicant's redirected space, which Applicant believes it cannot, Kobayashi does not perform an act of "disregarding" the data in the RAM 58, as recited by Applicant's claims. Instead, as the Examiner correctly notes, RAM data is "lost" due to the nature of the type of memory, which is not the same as being "disregarded" by a software redirection driver.

Furthermore, even if Kobayashi can be said to disregard redirected data, which it cannot, Kobayashi does not, after the disregarding of the data, process read requests to previously redirected data by providing the data from the protected space instead of the redirected data. When Kobayashi starts up, it initializes its RAM area 58 by copying all of the data from ROM area 56 to the RAM area 58. (Kobayashi, 10:8-19 and Figure 11.) Then, Kobayashi redirects every request made to its first ROM area 56 instead to the RAM area 58. (Kobayashi, 10:32-61 and Figure 12.) Specifically, Figure 12 shows "steps used for converting a logical address to a physical address ... in response to a ... request to read and write data." (Kobayashi, 10:32-36.) In sum, Kobayashi never processes any requests to the first ROM area 56 by providing data from the first ROM area 56, and instead always processes every request to the first ROM area 56 by providing data from the RAM area 58.

In addition, Hansen does not teach, suggest, or motivate a redirection driver that intercepts from external requesting code a request to modify a location in an unprotected space. Specifically, claim 3 recites, "intercepting from requesting code that is external to the loaded software redirection driver a request to modify ... a location in the unprotected space." Claim 32 recites, "intercepting from requesting code that is external to the loaded software redirection driver a request to modify ... a location in the unprotected space." Claim 54 recites, "intercept from requesting code that is external to the software redirection driver a request to modify ... a location in the unprotected space." Claim 72 recites, "intercepting from requesting code that is external to the redirection driver a request to modify ... a location referred to by an unprotected space table."

Hansen does not teach, suggest, or motivate the interception of requests as recited by Applicant's claims. The Examiner asserts that the temporary file briefly noted by Hansen

teaches the modification of unprotected space. (Office Action, p. 4.) However, even if Hansen's temporary file could be equated with Applicant's unprotected space, which it cannot, Hansen nowhere describes intercepting, *from external code*, requests to such unprotected space. Instead, the temporary file of Hansen appears to be used solely to cache modification data resulting from the operation of the Hansen system itself (e.g., multiple modification requests to the NMS), and not from external requesting code. In other words, even if Hansen's temporary files are unprotected space, which they are not, external code in Hansen would never be able to make requests to modify those temporary files, because the temporary files appear to merely be internal bookkeeping/caching files used by the Hansen system.

Thus, neither Hansen nor Kobayashi teach, suggest, or motivate at least one aspect of each of Applicant's independent claims 3, 32, 54, and 72.

Rejections of Claims 72, 79, 84, and 93 Based on Hansen and/or Kobayashi

Each of independent claims 72 and 79 (as amended) and new claims 84, and 93, recite aspects that are nowhere taught, suggested, or motivated by Hansen or Kobayashi, alone or in any motivated combination. In particular, each of these claims recites an unprotected space table that is used to determine whether to initiate an intercepted request without redirection. Specifically, claim 72 recites, "when the request is to modify *a location referred to by the unprotected space table*, initiating modification of the location in the unprotected space without redirection." Claim 79 recites, "when the request is to modify *a location referred to by the unprotected space table*, disregard the request so that data in the location referred to by the unprotected space table is modified according to the request." Claim 84 recites, "when the request is to modify *a location referred to by the unprotected space table*, initiating modification of the location in the unprotected space without redirection." And claim 93 recites, "when the request is to modify *a location referred to by the unprotected space table*, initiating modification of the location in the unprotected space without redirection." (Emphasis added throughout.)

Hansen does not teach, suggest, or motivate "when the request is to modify *a location referred to by the unprotected space table*, initiating modification of the location in the unprotected space without redirection" as recited by Applicant's claims (emphasis added). The Examiner asserts that the temporary file briefly noted by Hansen teaches the modification of

unprotected space. (Office Action, p. 4.) However, even if Hansen's temporary file could be equated with Applicant's unprotected space, which it cannot, Hansen nowhere describes the use of an unprotected space table to determine whether an intercepted request is directed to the unprotected space. Applicant has reviewed Hansen in detail and cannot find any teaching or suggestion of the existence and use of an unprotected space table in the manner recited by Applicant's claims.

Nor does Kobayashi teach, suggest, or motivate "when the request is to modify *a location referred to by the unprotected space table*, initiating modification of the location in the unprotected space without redirection" as recited by Applicant's claims (emphasis added). The Examiner appears to assert that Kobayashi describes unprotected space tables, by citing to various portions of Kobayashi. (Office Action, p. 23, rejection of claims 31, 70, and 80, citing Figures 6-7, 9, 10A-10C, and 11; column 2, lines 51-68, column 3, lines 1-11, and columns 7-8.) However, Applicant respectfully submits that the Examiner may have improperly grouped claims 70 and 80, which both recite unprotected space tables, with claim 31, which recites "at least one of a protected space redirection table, an available space table, or an unprotected space table." It is not clear which table the Examiner intended to be suggested by Kobayashi. However, even if Examiner intended to assert that the cited portions of Kobayashi describe unprotected space tables, Applicant has reviewed the cited portions in detail and can find no teaching, suggestion, or motivation for unprotected space tables. In particular, Figure 6 appears to depict track information for a 640KB floppy disk (6:53-56); Figure 7 appears to depict the information of Figure 6 stored in a semiconductor auxiliary storage device (7:35-38); Figure 9 appears to depict a flowchart for determining storage capacity of a semiconductor auxiliary storage device (9:1-3); Figures 10A-10C appear to depict the data layout and addressing relationships of a semiconductor auxiliary storage device (9:43-10:31); and Figure 11 appears to depict a flowchart for copying data from a ROM area to a RAM area (10:8-19). Thus, these citations appear to be unrelated to unprotected space tables. Furthermore, Applicant has reviewed the remainder of Kobayashi in detail and cannot find any teaching or suggestion of the existence and use of an unprotected space table in the manner recited by Applicant's claims.

Thus, neither Hansen nor Kobayashi teach, suggest, or motivate at least one aspect of each of Applicant's independent claims 72, 79, 84, and 93.

Rejections Based on White

As stated earlier, in response to the Rule 132 Declaration of Dr. Randy Keith Lomnes (hereinafter "Original Declaration") filed with Applicant's Amendment dated June 21, 2007, the Examiner appears to have modified his rejections under 35 U.S.C. § 102 based on White to rejections under 35 U.S.C. § 103 based on White in view of Hansen or in view of Hansen and Kobayashi. The Examiner now appears to be arguing that White may be combined with Hansen in order to teach, suggest, or motivate Applicant's aspect of *installing* or *loading* code, such as a software redirection driver, "during power-up initialization" or "from a powered-down state," as recited by each of Applicant's independent claims 3, 32, 54, 72, 79, 84, and 93.

Applicant respectfully disagrees. A Supplemental Declaration of Dr. Randy K. Lomnes has been provided herewith. As noted in the Original Declaration, Dr. Lomnes is the inventor of the above-identified patent application, a co-founder of Hyper Technologies, Inc. (the current assignee of the above-identified patent application), and has extensive experience in both hardware and software design and implementation. (Original Declaration, ¶¶ 1 and 3.) In particular, as will be discussed further below, Dr. Lomnes explains in detail why White cannot be combined with Hansen in the manner described by the Examiner.

As discussed at length in Applicant's Amendment dated June 21, 2007, the remarks of which are herein incorporated by reference, and supported by the Original Declaration, Hansen and White cannot be legitimately combined because one skilled in the art would not have been motivated to combine these references because such a combination would render White inoperable. In summary, White can only perform its function of protecting the computing system from viruses by virtue of the fact that it is implemented as an external hardware component that monitors and possibly restricts read/write requests to a storage medium. This conclusion is supported by the statements of Dr. Lomnes in his Original Declaration. (See, e.g., Original Declaration, ¶ 4 (purpose of White is to protect a disk from malicious software); ¶¶ 8-9 (purpose of White would be defeated by modifying the hardware-oriented approach of White to operate as a software driver); and ¶ 5 (White can only perform its function by virtue of the fact that it is implemented as an external hardware component that controls all communication between a personal computer and a disk drive).) Accordingly, one

skilled in the art would not be motivated to implement the supervisor of White as a software driver as recited by Applicant's claims.

In addition, in his Supplemental Declaration, Dr. Lomnes has provided objective evidence of secondary considerations of non-obviousness. In particular, Dr. Lomnes approach solves numerous disadvantages of the White approach. First, hardware cards as described by White are expensive to design, debug, manufacture, install, and maintain. (Supplemental Declaration, ¶¶ 4-7 and 9.) Second, because the White card is distinct from the operating system, it cannot leverage services provided by the operating system, such as accessing tables of available disk blocks. (*Id.*, ¶ 8.) Third, Dr. Lomnes was attempting to solve a different problem than that addressed by White, and that could not be solved by White. In particular, Dr. Lomnes was addressing the problem of users disrupting computer systems of schools and libraries, organizations which did not have the money to invest in hardware-oriented solutions such as White, which are inherently expensive. (*Id.*, ¶ 11 and ¶¶ 4-7.) Fourth, considerable experimentation was required by Dr. Lomnes to develop a software approach that would intercept 100% of disk traffic, be robust in the face of power outages, and continue to function in the presence of new software installations. (*Id.*, ¶ 12-14.) Finally, the DEEP FREEZE product has experienced considerable commercial success, as evidenced by its use in a substantial share of the school market and its wide licensing across industries, while vendors of hardware-oriented approaches such as White have gone out of business. (*Id.*, ¶ 10, 16-19.)

Furthermore, as discussed in detail in Applicant's Office Action dated June 21, 2007 (the specifics of which are omitted here in the interests of brevity), combining White with the teachings of Kobayashi does not teach, suggest, or motivate a software redirection driver. In summary, because neither White nor Kobayashi teach a software redirection driver, a combination of the two references cannot, by definition, teach all aspects of Applicant's independent claims.

Conclusion

Thus, because at least one aspect of independent claims 3, 32, 54, 72, 79, 84, and 93 is not taught, suggested or motivated by Hansen, Kobayashi, or White, alone or in combination, claims 3, 32, 54, 72, 79, 84, and 93 are not anticipated by, or obvious in view of

any motivated combination of, Hansen, Kobayashi, and White. Similarly, because dependent claims 4-9, 11, 13-23, 26, 30, 31, 33-46, 49, 53, 56-66, 70-71, 73-78, 81, 85-92, and 94-101 incorporate the respective aspects of claims 3, 32, 54, 72, 79, 84, and 93, by virtue of their dependencies, the dependent claims also are not anticipated by or rendered obvious in view of Hansen, White, or Kobayashi, alone or in any motivated combination, for at least the reasons set forth above.


The Examiner has also rejected many of the dependent claims for different reasons. Applicant traverses these rejections and notes that dependent claims 4-9, 11, 13-23, 26, 30, 31, 33-46, 49, 53, 56-66, 70-71, 73-78, 81, 85-92, and 94-101 are also not taught, suggested, or motivated by Hansen, Kobayashi, or White for a variety of additional reasons. In the interests of expediting prosecution, such arguments are not addressed in more detail herein. Accordingly, Applicant reserves the right to further traverse these rejections as necessary.

In the event the Examiner disagrees with applicant or finds minor informalities, Applicant respectfully requests a supplemental telephone interview to discuss the Examiner's issues and to expeditiously resolve prosecution of this application. Accompanying this Amendment is an Applicant Initiated Interview Request Form in the event the Examiner does not agree that the claims are allowable over the cited references. Applicant's representative can be contacted at (206) 622-4900.

In closing, Applicant respectfully submits that all of the pending claims are allowable and respectfully requests the Examiner to enter these amendments and to reconsider this application and its timely allowance. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Again, Applicant's representative thanks the Examiner for his prompt and courteous attention.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

A handwritten signature in cursive script that reads "Ellen M. Bierman". The signature is written in black ink and is positioned above a horizontal line.

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EMB:asl

Enclosures:

Supplemental Rule 1.132 Declaration of Randy Keith Lomnes, Ph.D.
Applicant Initiated Interview Request Form

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